SERVICE MANUAL

FISHER

MT-250
MT-1250

Stereo Turntable

(EUROPE)

134 093 40
(MT-250)
134 093 41
(MT-1250)

WM-17146

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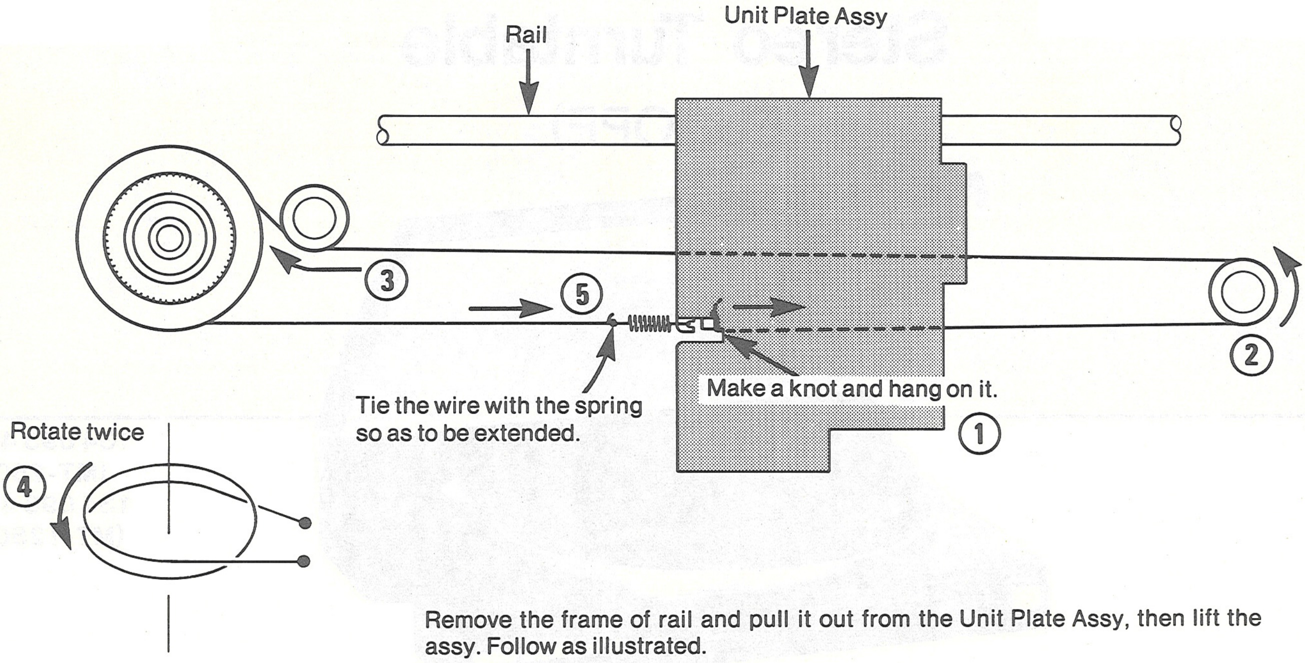
ARM FEED CORD STRINGING



Rail
Unit Plate Assy
③
⑤
②
Tie the wire with the spring so as to be extended.
Make a knot and hang on it.
①
Rotate twice
④

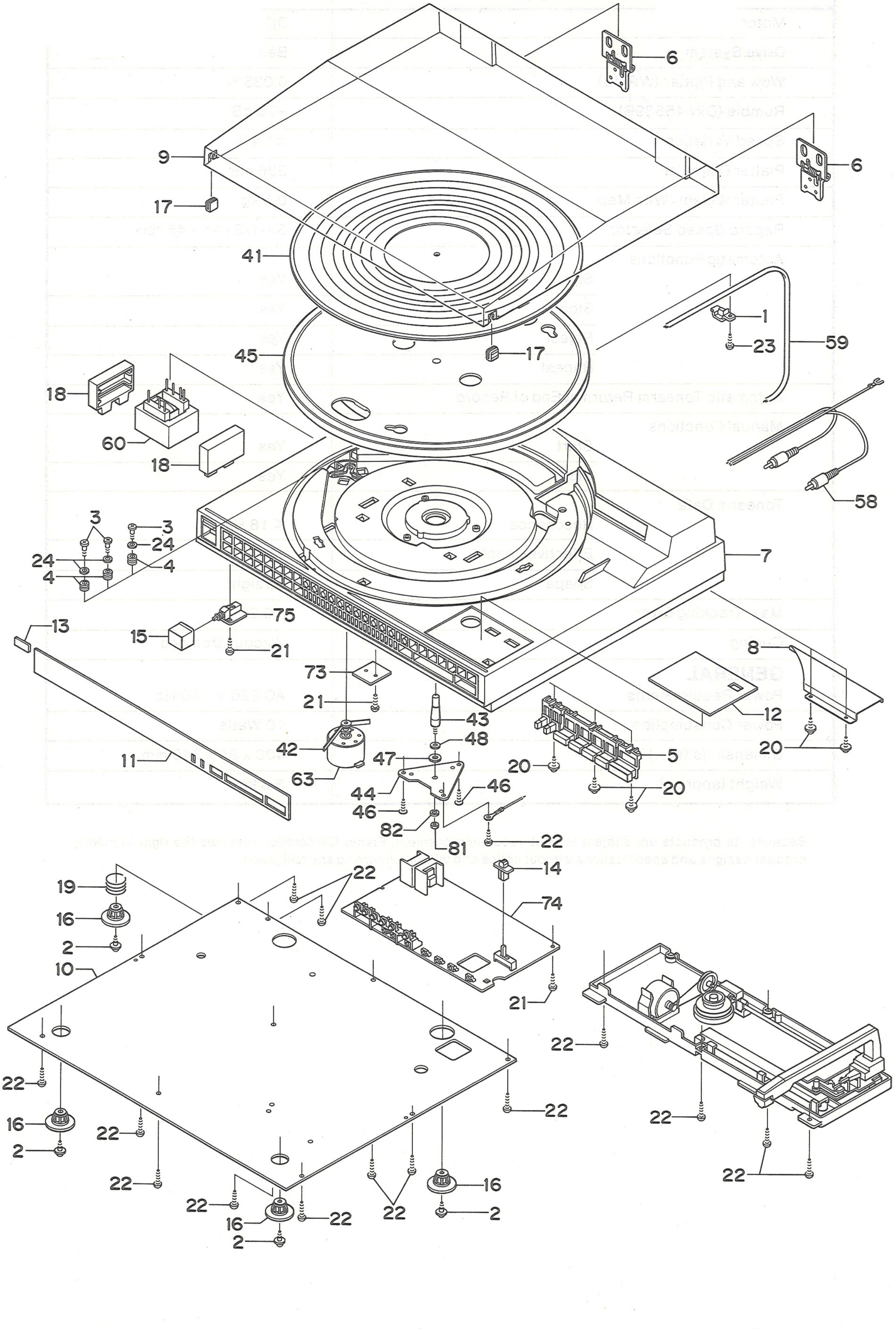
Remove the frame of rail and pull it out from the Unit Plate Assy, then lift the assy. Follow as illustrated.

SPECIFICATIONS

TURNTABLE		MT-250
Motor		DC Servo
Drive System		Belt
Wow and Flutter (WRMS)		0.035 %
Rumble (DIN 45539B)		−70 dB
Speed Variation		±1.5 %
Platter Diameter		296 mm
Platter Weight (With Mat)		0.5 kg
Record Speed Selector		33-1/3 rpm / 45 rpm
Automatic Functions		
	Start	Yes
	Stop	Yes
	Reject	Yes
	Repeat	Yes
Automatic Tonearm Return at End of Record		Yes
Manual Functions		
	Start	Yes
	Stop	Yes
Tonearm Data		
	Resonance	< 18 Hz
	Effective Length	130 mm
	Shape	Straight
Max. Tracking Error		±0.2°
Cueing		Viscous Damped
GENERAL		
Power Requirements		AC 220 V 50 Hz
Power Consumption		10 Watts
Dimensions (W x H x D)		400 x 99 x 340 mm
Weight (approx.)		3.3 kg

Because its products are subject to continuous improvement, Fisher Corporation reserves the right to modify product designs and specifications without notice and without incurring any obligation.

CABINET & CHASSIS EXPLODED VIEW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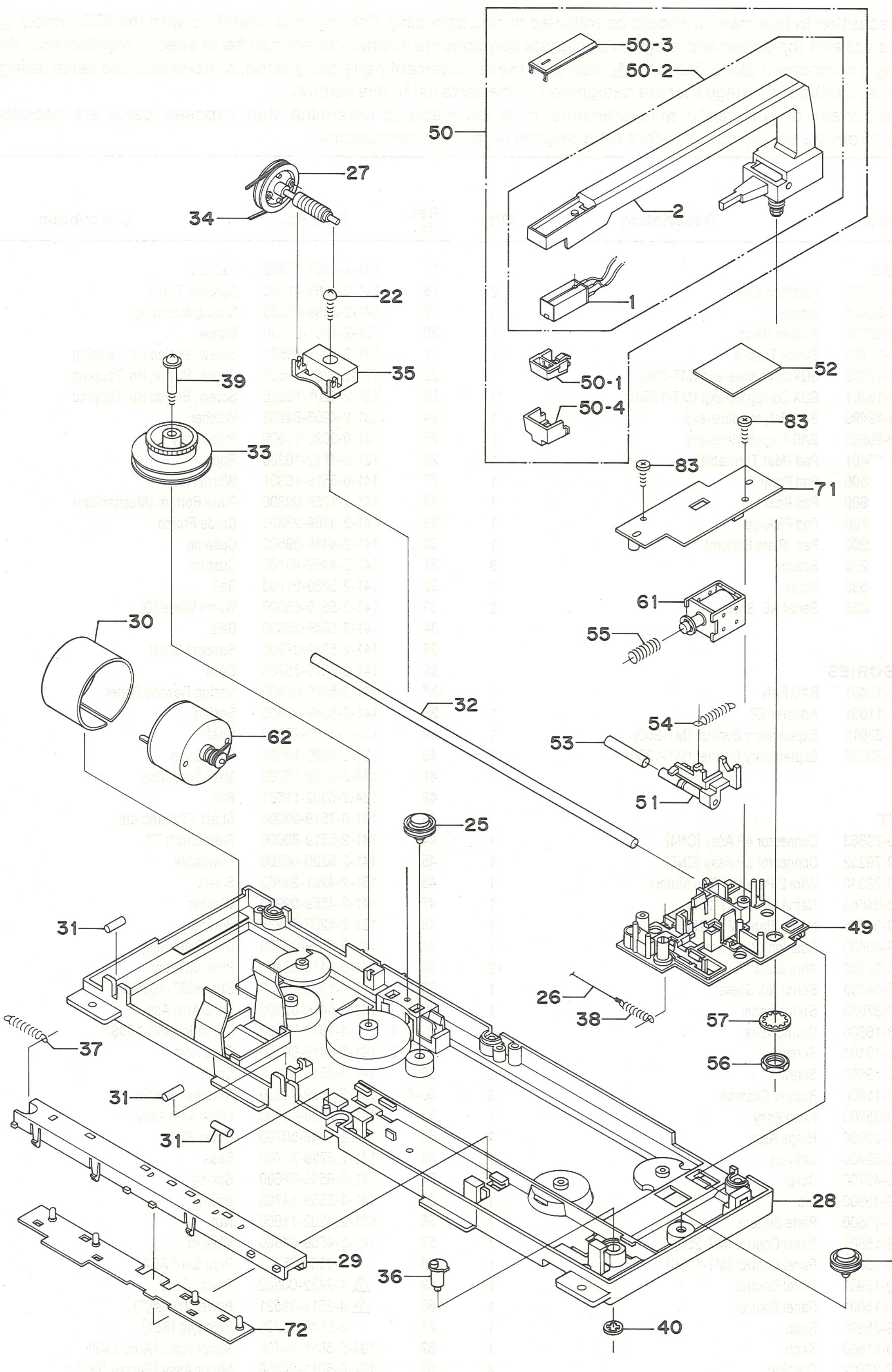
2

CABINET & CHASSIS EXPLODED VIEW (Continued)


50-3
50-2
50
27
2
34
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50-1
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71
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30
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72

CABINET & CHASSIS PARTS LIST

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual.
Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

PACKAGE

Ref. No.	Part No.	Description	Q'ty
	131-6-3069-17050	Patching Sheet	2
	131-6-9439-00400	Ribbon	2
	131-6-9459-00300	Rubber Band	1
	134-2-2104-12700	Screw Transit	1
	141-6-1189-18400	BOX Corrugate-exp (MT-250)	1
	141-6-1189-18401	BOX Corrugate-exp (MT-1250)	1
	141-6-2519-19490	BAG Polyethylene-exp	1
	141-6-2519-20990	BAG Polyethylene-exp	1
	141-6-3119-23401	Pad (Mat Turntable)	1
	141-6-3119-28500	Pad Front	1
	141-6-3119-28600	Pad Rear	1
	141-6-3119-28700	Pad Pick-up	1
	141-6-3119-32200	Pad (Plate Bottom)	1
	141-6-3319-13200	Spacer	3
	141-6-4159-00639	Notes	1
	141-6-4559-04035	Serial N0. Sheet	2

ACCESSORIES

Ref. No.	Part No.	Description	Q'ty
	131-6-2719-10401	BAG FAN	1
	134-2-2901-11601	Adapter EP	1
	142-6-4119-33015	Explanatory Booklet (MT-250)	1
	142-6-4119-33087	Explanatory Booklet (MT-1250)	1

CABINET

Ref. No.	Part No.	Description	Q'ty
	4-2359-79863	Connector 4P Assy [CN4]	1
	4-2359-79252	Connector 3P Assy [CN5]	1
	4-2439-73040	Wire 2 Parallel (Arm Motor)	1
	131-2-1310-34663	Name Plate (MT-250)	1
	131-2-1310-34665	Name Plate (MT-1250)	1
	141-2-4459-40400	Cushion (Plate Bottom)	1
	141-2-4729-07100	Wire Band	12
	141-6-4559-04035	Serial N0. Sheet	1
	141-6-4729-37686	Stylus Label	1
1	131-2-3608-16800	Cramp Wire	1
2	134-2-4201-13400	Screw	4
3	134-2-4201-13600	Screw	3
4	134-2-5202-11800	Rubber Cushion	3
5	141-0-1619-35700	Knob Assy	1
6	141-0-2519-00900	Hinge Assy	2
7	141-2-1129-52400	Cabinet	1
8	141-2-1149-46700	Cover	1
9	141-2-1249-49900	Lid	1
10	141-2-1259-10500	Plate Bottom	1
11	141-2-1439-15801	Panel Control (MT-250)	1
11	141-2-1439-15802	Panel Control (MT-1250)	1
12	141-2-1439-15901	Panel Control	1
13	141-2-1439-16001	Panel Control	1
14	141-2-1649-38800	Knob	1
15	141-2-1659-51600	Knob	1
16	141-2-4459-37602	Cushion	4
17	141-2-4459-37900	Pad Lid	2
18	141-2-4459-41600	Cushion Trans	2
19	141-2-8559-06505	Spring Mounting	1
20	131-2-4201-21100	Screw	5
21	131-2-4201-19501	Screw, Button Hd. Tapping	3
22	131-2-4201-19503	Screw, Button Hd. Tapping	16
23	131-2-4201-19502	Screw, Button Hd. Tapping	1
24	131-2-4203-84233	Washer	3
25	131-0-3020-11000	Pully Assy	2
26	131-2-4112-10200	Rope	1
27	141-0-5519-10301	Worm Assy	1
28	141-2-1259-09300	Plate Bottom (Mechanism)	1
29	141-2-3169-28800	Guide Frame	1
30	141-2-4459-39500	Cushion	1
31	141-2-4459-40100	Cushion	3
32	141-2-5289-01700	Rail	1
33	141-2-5519-65000	Worm Wheel(D)	1
34	141-2-5649-25000	Belt	1
35	141-2-5739-07600	Support Shaft	1
36	141-2-7519-75700	CAM	1
37	141-2-8519-01800	Spring Rewind Roller	1
38	141-2-8549-37600	Spring	1
39	134-2-4106-27002	Shaft	1
40	131-2-4220-10507	Ring Snap	1
41	134-2-6102-15702	MAT Turntable	1
42	134-2-6302-11601	Belt	1
43	141-0-7519-05000	Shaft TT Complete	1
44	141-2-3519-80000	Plate Shaft TT.	1
45	141-2-5229-00200	Turntable	1
46	131-2-4201-23703	Screw	2
47	141-2-4569-09900	Washer	1
48	131-2-4203-84235	Washer	1
49	141-0-3129-02500	Unit Plate Assy	1
50	141-0-6419-02401	Pick-up Assy	1
50-1	4-1579-70200	Stylus(ST-103SD)	1
50-2	141-0-6419-02500	Tone Arm Assy	1
1	4-1579-70190	Cartridge(MG-103S)	1
2	141-2-6419-00500	Tone Arm	1
50-3	141-2-3519-82100	Cover	1
50-4	141-2-6459-00600	Retainer Needle	1
51	141-0-7439-19400	Lifter Arm Assy	1
52	141-2-1149-50700	Cover Plate	1
53	141-2-5729-22700	Boss	1
54	141-2-8549-32600	Spring	1
55	141-2-8559-14700	Spring	1
56	131-2-4202-11600	Nut	1
57	141-2-4569-04300	Washer	1
58	4-2369-75370	Plug Cord RCA	1
59	⚠ 4-2432-00502	Power Cord	1
60	⚠ 4-2512-30521	Power Trans [T1]	1
61	4-2649-70790	Solenoid [SL1]	1
62	134-0-5011-04400	Motor Assy (Arm) [M2]	1
63	134-0-5011-04500	Motor Assy (Phono) [M1]	1

CABINET & CHASSIS PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
71	141-0-1939-17560	Sensor P.C.B. Assy	1
72	141-0-1939-17450	LED P.C.B. Assy	1
73	141-0-1939-17550	Primary P.C.B. Assy	1
74	141-0-1939-17430	Control P.C.B. Assy	1
75	141-0-1939-17440	Power Switch P.C.B. Assy	1
81	106-3-1304-00011	Hex. Nut-3, M4.0	1
82	110-3-2104-00011	Spring Washer-2, M4.0	1
83	143-3-1703-00811	Screw, Bind Hd. Tapping-B, +M3.0x8	2

NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

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TURNTABLE ADJUSTMENT

BEFORE ATTEMPTING ADJUSTMENT

1. Adjustments through the rear of the cabinet should be carried out from the bottom with the cabinet placed firmly on a level base.
2. Carry out adjustment procedures in the order given here.

MEASURING INSTRUMENTS REQUIRED

- Stroboscope Sheet
- DC VTVM (DC voltmeter with high impedance)
- Screw driver

STYLUS HEIGHT ADJUSTMENT

1. Remove the turntable mat and belt and turn the power on.
2. Press the ◁ button and move the tone arm so that the stylus height adjustment screw can be seen in the turntable aperture (see Fig.1).
3. Turn the adjustment screw so that the stylus height is 7.5mm from the turntable (it is best to use some instrument like that depicted in Fig.2).

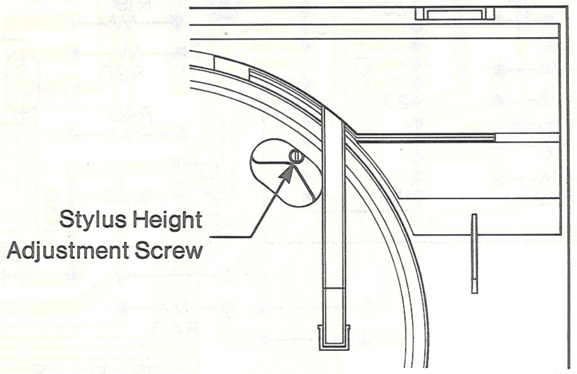


Fig.1

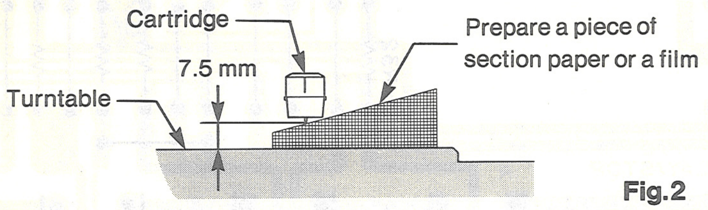


Fig.2

ROTATION ADJUSTMENT

1. Replace the belt and turntable mat and set the SPEED switch to 45 rpm.
2. Using a stroboscope sheet, adjust VR2 on the Control PCB so that the rotation matches up (see Fig.3).
3. Set the SPEED switch to 33 rpm and carry out the same procedure with VR3.

NOTE:
Always carry out this adjustment by adjusting the 45 rpm speed first.

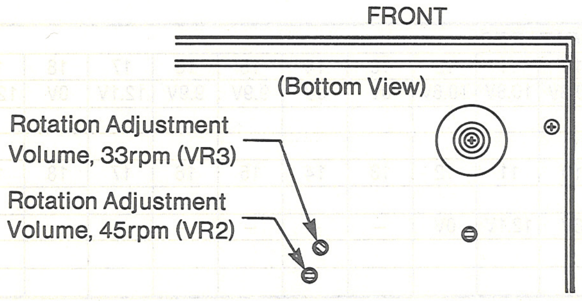


Fig.3

ARM FEED PHOTOINTERRUPTER SENSITIVITY ADJUSTMENT

1. Pless the ◁ button and move the tone arm so that the VR1 on the Sensor PCB can be seen in the turntable aperture. Then fully turn the VR1 counter-clockwise.
2. Place a minimally de-centered record disk on the turntable and playback.
3. When the turntable has completed at least 5 revolutions after the needle has dropped on to the recoad, pless the CUEING button and lift the tone arm.
4. At this point, adjust VR1 on the Control PCB so that the arm rises straight up (see Fig.4).
5. If the adjusting range of VR1 is limited and it is hard to adjust, turn the VR1 on the Sensor PCB clockwise a little and adjust again.

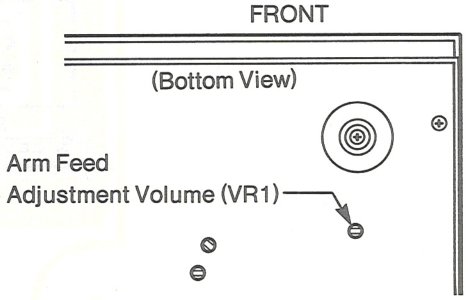


Fig.4

LEAD-IN ADJUSTMENT

1. Place a record on the turntable and press the PLAY/STOP button to begin lead-in.
2. Turn the adjustment cam so that lead-in attains the proper position (see Fig.5). (Rotating the cam clockwise moves the lead-in in toward the center, while rotating it counter-clockwise moves it out towards the edge.)

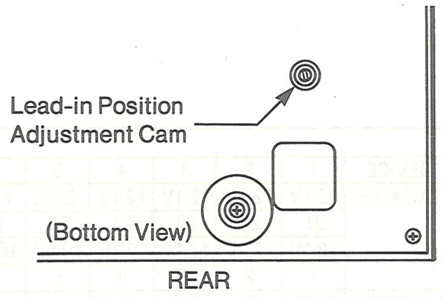
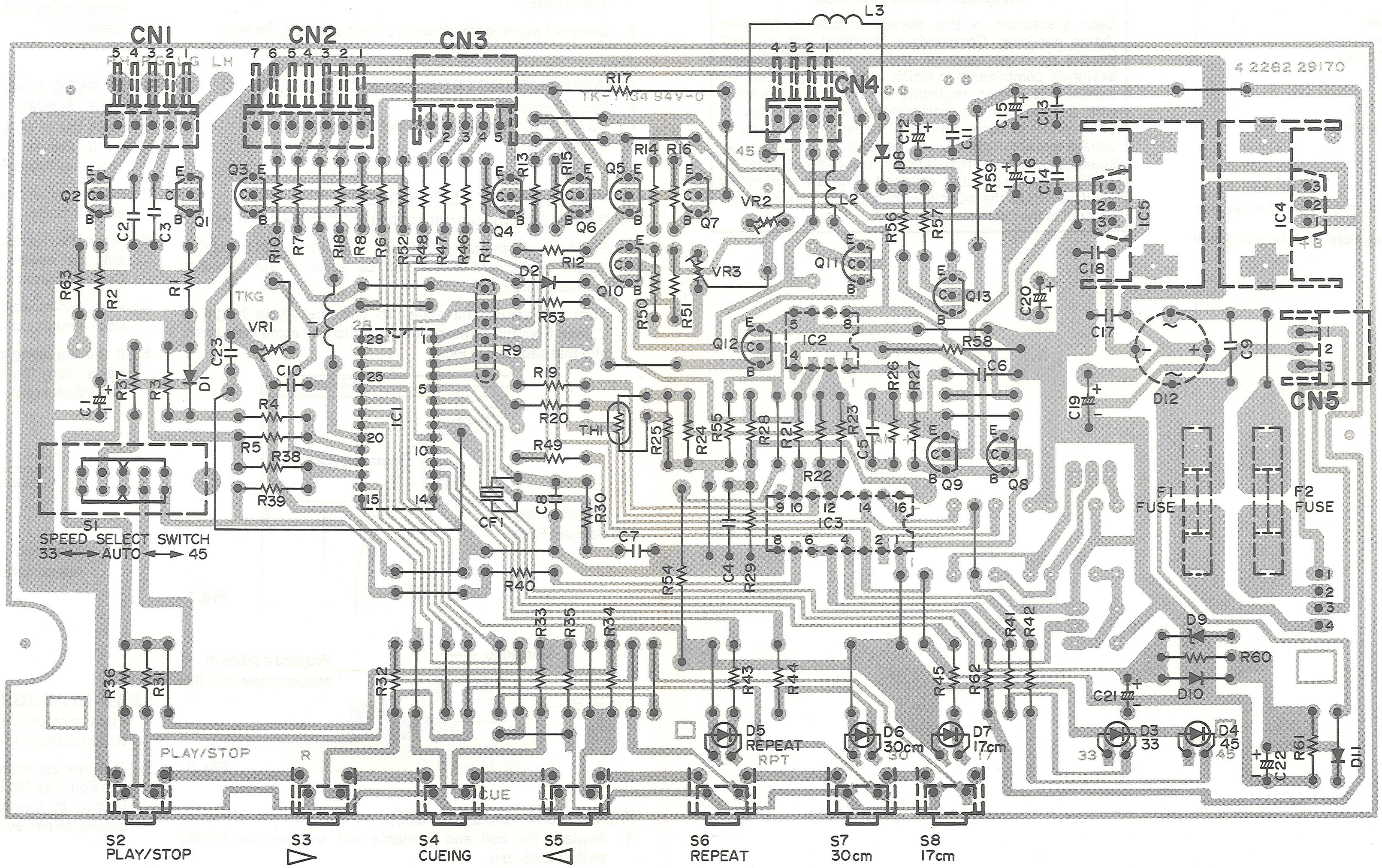


Fig.5

CONTROL P.C.BOARD

(BOTTOM VIEW)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RH RC G LG LH
CN2
7 6 5 4 3 2 1
CN3
1 2 3 4 5
CN4
4 3 2 1
L3
45
R17
TK-1 34 94V-0
4 2262 29170
Q1
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Q3
Q4
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Q6
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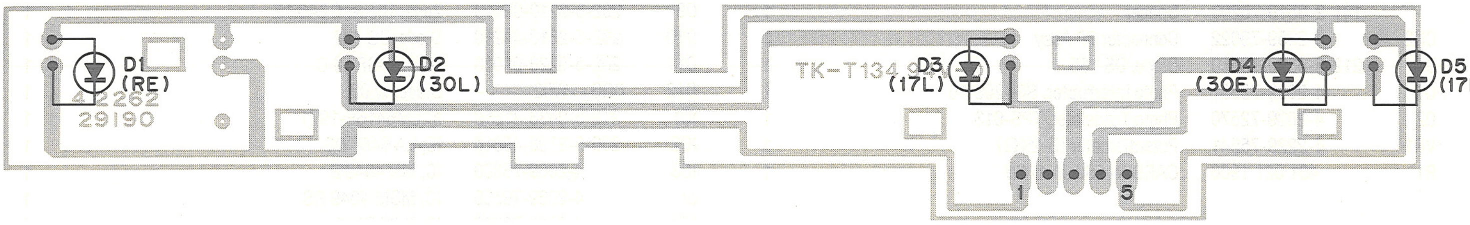
R63
VR1
VR2
VR3
L1
L2
TKG
TH1
CF1
D1
D2
D8
D9
D10
D11
D12
IC1
IC2
IC3
IC4
IC5
CN5
F1
FUSE
F2
FUSE
S1
SPEED SELECT SWITCH
33 ⟷ AUTO ⟷ 45
PLAY/STOP
R
CUE
D5
REPEAT
RPT
D6
30cm
30
D7
17cm
17
D3
33
D4
45
S2
PLAY/STOP
S3
▷
S4
CUEING
S5
◁
S6
REPEAT
S7
30cm
S8
17cm

IC PIN NUMBERS DC VOLTAGES																					
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC1	LM6416E	12.1V	12.1V	12.1V	12.1V	2.5V	1.9V	12.1V	4.5V	8.0V	10.8V	10.8V	10.6V	0V	0V	9.9V	9.9V	12.1V	0V	12.1V	5.2V
		21	22	23	24	25	26	27	28												
		12.1V	12.1V	12.1V	12.1V	10.8V	10.8V	9.4V	0.1V												
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC2	LA6458DS	0.6V	0V	0V	−12.0V	–	–	–	12.1V												
IC3	MN4049B	12.1V	–	–	12.1V	0.2V	0.2V	12.1	0V	12.1V	0V	12.1V	0V	–	–	–	–				
IC4	NJM7812	12.2V	0V	20.6V																	
IC5	NJM7912	−12.0V	−21.0V	0V																	

TRANSISTOR DC VOLTAGES									
SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E
Q4	2SA608	12.1V	−12.0V	12.1V	Q9	2SA984	0.6V	−12.0V	0V
Q5	2SA608	12.1V	−12.0V	12.1V	Q10	2SC536	1.6V	0.9V	0.9V
Q6	2SC2274	−12.0V	0V	−12.0V	Q11	2SC2274	0.1V	12.1V	0.9V
Q7	2SC2274	−12.0V	0V	−12.0V	Q12	2SC536	0.7V	0.1V	0V
Q8	2SA608	0.6V	12.1V	0V	Q13	2SC2274	5.9V	11.2V	5.2V

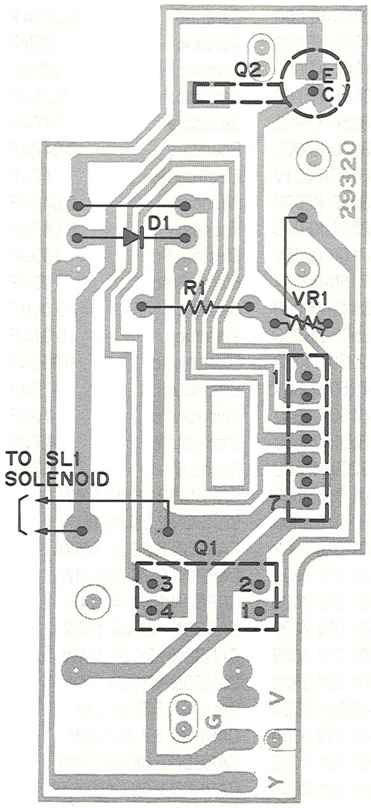
LED P.C.BOARD

(BOTTOM VIEW)


D1
(RE)
42262
29190
D2
(30L)
TK-T134 9
D3
(17L)
D4
(30E)
D5
(17E
1
5

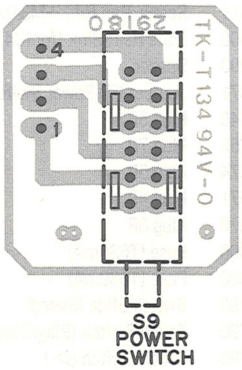
SENSOR P.C.BOARD

(BOTTOM VIEW)


Q2
E
C
29320
D1
R1
VR1
1
7
TO SL1
SOLENOID
Q1
3
4
2
1
V
G
Y

POWER SWITCH P.C.BOARD

(BOTTOM VIEW)


29180
TK-T134 94V-0
4
1
8
S9
POWER
SWITCH

P.C.BOARD PARTS LIST

SENSOR P.C.B. ASSY

Ref. No.	Part No.	Description	Q'ty
71	141-0-1939-17560	Sensor P.C.B. Assy	1
	141-2-3519-76200	Spacer	1
CN2	4-2359-79022	Connector 7P Assy	1
D1	212-5-4390-13510	Diode, DS 135	1
Q1	4-2039-72581	Photo Interrupter, SPI-206-10	1
Q2	4-2039-72570	Photo Transister, TPS-613	1
VR1	4-2229-75541	Potentiometer (B-2KΩ)	1
R1	401 021 1906	CARBON 560 JA 1/4W	1

LED P.C.B. ASSY

Ref. No.	Part No.	Description	Q'ty
72	141-0-1939-17450	LED P.C.B. Assy	1
CN3	4-2359-79803	Connector 5P Assy	1
D1	4-2029-75040	LED, SLR 34 VC 3	1
D2	4-2029-75040	LED, SLR 34 VC 3	1
D3	4-2029-75040	LED, SLR 34 VC 3	1
D4	4-2029-75040	LED, SLR 34 VC 3	1
D5	4-2029-75040	LED, SLR 34 VC 3	1

PRIMARY P.C.B. ASSY

Ref. No.	Part No.	Description	Q'ty
73	141-0-1939-17550	Primary P.C.B. Assy	1
	4-2372-00830	EC Terminal 1P	2
	111-2-6220-11100	Wire Wrap Terminal	2

CONTROL P.C.B. ASSY

Ref. No.	Part No.	Description	Q'ty
74	141-0-1939-17430	Control P.C.B. Assy	1
	⚠ 4-2352-00200	Fuse Holder	4
	4-2359-78508	Connector 1P Assy	1
	101-3-1303-00611	Screw, Pan Hd., +M3.0x6	2
	131-2-6201-35500	Plate Heat Sink (for IC4, IC5)	2
	141-2-3519-75200	Spacer	1
	131-2-9800-01071	Jumper (To Power Switch P.C.B.)	1
CN1	4-2369-22740	Plug 5P	1
CN2	4-2369-22750	Plug 7P	1
CN3	4-2369-73674	Plug 5P	1
CN4	4-2369-71571	Plug 4P	1
CN5	4-2369-73670	Plug 3P	1
F1	⚠ 4-2349-20400	Fuse (T630mA)	1
F2	⚠ 4-2349-20400	Fuse (T630mA)	1
S1	4-2319-78290	Switch Slide (Speed)	1
S2	4-2319-75790	Touch Switch (Play/Stop)	1
S3	4-2319-75790	Touch Switch (▷)	1
S4	4-2319-75790	Touch Switch (Cueing)	1
S5	4-2319-75790	Touch Switch (◁)	1
S6	4-2319-75790	Touch Switch (Repeat)	1
S7	4-2319-75790	Touch Switch (30)	1
S8	4-2319-75790	Touch Switch (17)	1
L1	4-2532-00540	Choke Coil (47μH)	1
L2	4-2532-00150	Choke Coil (10μH)	1
L3	4-2532-00150	Choke Coil (10μH)	1
CF1	4-2259-70780	CSB 800K	1
TH1	204-5-9000-05000	Thermistor, SDT 500	1
VR1	4-2222-01040	Semi Fixed Volume (B-20kΩ)	1
VR2	4-2222-01400	Potentiometer (B-10kΩ)	1
VR3	4-2222-01400	Potentiometer (B-10kΩ)	1
D1	202-5-2810-44210	Diode, DS 442	1
D2	202-5-2810-44210	Diode, DS 442	1
D3	4-2029-75030	LED, SLP 960 C (33)	1
D4	4-2029-75030	LED, SLP 960 C (45)	1
D5	4-2029-75020	LED, SLP 260 CU (Repeat)	1
D6	4-2029-75030	LED, SLP 960 C (30)	1
D7	4-2029-75030	LED, SLP 960 C (17)	1
D8	202-5-3210-05613	Zener Diode, GZA5.6Z	1
D9	202-5-3210-05113	Zener Diode, GZA5.1Z	1
D10	202-5-2810-44210	Diode, DS 442	1
D11	202-5-0220-01010	Diode, DSF 10 C	1
D12	DGG--W02----	Diode, W 02	1
IC1	218-5-0436-41619	IC,LM6416E-1971	1
IC2	206-5-2726-45810	IC, LA 6458 DS	1
IC3	4-2069-75300	IC, MN 4049 B	1
or	4-2069-72530	IC, MSM 4049 RS	1
IC4	4-2069-72560	IC, NJM 7812	1
IC5	4-2069-72570	IC, NJM 7912	1
Q1	203-5-4921-01280	Transistor, 2SD 1012	1
Q2	203-5-4921-01280	Transistor, 2SD 1012	1
Q3	203-5-5000-53660	Transistor, 2SC 536	1
Q4	203-5-7230-60860	Transistor, 2SA 608	1
Q5	203-5-7230-60860	Transistor, 2SA 608	1
Q6	203-5-7252-27460	Transistor, 2SC 2274	1
Q7	203-5-7252-27460	Transistor, 2SC 2274	1
Q8	203-5-7252-27460	Transistor, 2SC 2274	1
Q9	203-5-6820-98460	Transistor, 2SA 984	1
Q10	203-5-5000-53670	Transistor, 2SC 536	1
Q11	203-5-7252-27460	Transistor, 2SC 2274	1
Q12	203-5-5000-53660	Transistor, 2SC 536	1
Q13	203-5-7252-27460	Transistor, 2SC 2274	1
C1	CD4-7-6100-0001V	Electrolytic 47μF 10V	1
C2	CI1-0-3250-MF00R	Boundary 0.01μF 25V ±20%	1
C3	CI1-0-3250-MF00R	Boundary 0.01μF 25V ±20%	1
C4	CI1-0-3250-MF00R	Boundary 0.01μF 25V ±20%	1
C5	CC3-3-1250-KE00R	Ceramic 330pF 25V ±10%	1
C6	CC1-0-2500-KE00R	Ceramic 0.001μF 50V ±10%	1
C7	CC2-2-1500-KD00C	Ceramic 220pF 50V ±10%	1
C8	CC2-2-1500-KD00C	Ceramic 220pF 50V ±10%	1
C9	CC1-0-3501-YEY0C	Ceramic 0.01μF 500V +100,-0%	1
C10	CI4-7-3250-KF00C	Boundary 0.047μF 25V ±10%	1
C11	CI4-7-3250-KF00C	Boundary 0.047μF 25V ±10%	1
C12	CD4-7-6100-0001V	Electrolytic 47μF 10V	1
C13	CI4-7-3250-KF00C	Boundary 0.047μF 25V ±10%	1
C14	CI4-7-3250-KF00C	Boundary 0.047μF 25V ±10%	1
C15	CD1-0-7160-0006V	Electrolytic 100μF 16V	1
C16	CD1-0-7160-0006V	Electrolytic 100μF 16V	1
C17	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
C18	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
C19	4-2239-71360	Electrolytic 1000μF 25V	1
C20	CD4-7-7250-0006V	Electrolytic 470μF 25V	1
C21	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
C22	CD4-7-5500-0001V	Electrolytic 4.7μF 50V	1
C23	CI4-7-3250-KF00C	Boundary 0.047μF 25V ±10%	1
R1	401 016 3809	CARBON 2.2K JA 1/4W	1
R2	401 016 3809	CARBON 2.2K JA 1/4W	1
R3	401 023 2802	CARBON 8.2K JA 1/4W	1
R4	401 016 3809	CARBON 2.2K JA 1/4W	1
R5	401 012 7009	CARBON 10K JA 1/4W	1
R6	401 012 7009	CARBON 10K JA 1/4W	1
R7	401 012 7009	CARBON 10K JA 1/4W	1
R8	401 020 2904	CARBON 47K JA 1/4W	1
R9	4-2219-71580	Resistor (5.6KΩ x 5)	1
R10	401 019 5800	CARBON 4.7 JA 1/4W	1
R11	401 021 3009	CARBON 5.6K JA 1/4W	1
R12	401 021 3009	CARBON 5.6K JA 1/4W	1
R13	401 012 7009	CARBON 10K JA 1/4W	1
R14	401 012 7009	CARBON 10K JA 1/4W	1
R15	401 021 3009	CARBON 5.6K JA 1/4W	1
R16	401 021 3009	CARBON 5.6K JA 1/4W	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
R17	401 068 7107	OXIDE-MT 56 JA 2W	1
R18	401 016 3809	CARBON 2.2K JA 1/4W	1
R19	401 012 7009	CARBON 10K JA 1/4W	1
R20	401 012 7009	CARBON 10K JA 1/4W	1
R21	401 019 3004	CARBON 39K JA 1/4W	1
R22	401 022 3107	CARBON 6.8K JA 1/4W	1
R23	401 015 3800	CARBON 18K JA 1/4W	1
R24	401 020 0801	CARBON 470 JA 1/4W	1
R25	401 020 0801	CARBON 470 JA 1/4W	1
R26	401 012 5708	CARBON 1K JA 1/4W	1
R27	401 016 3809	CARBON 2.2K JA 1/4W	1
R28	401 014 4105	CARBON 1.5K JA 1/4W	1
R29	401 017 7608	CARBON 3.9 JA 1/4W	1
R30	401 012 9300	CARBON 1M JA 1/4W	1
R31	401 012 7009	CARBON 10K JA 1/4W	1
R32	401 012 7009	CARBON 10K JA 1/4W	1
R33	401 012 7009	CARBON 10K JA 1/4W	1
R34	401 012 7009	CARBON 10K JA 1/4W	1
R35	401 012 7009	CARBON 10K JA 1/4W	1
R36	401 012 7009	CARBON 10K JA 1/4W	1
R37	401 012 5708	CARBON 1K JA 1/4W	1
R38	401 012 7009	CARBON 10K JA 1/4W	1
R39	401 012 7009	CARBON 10K JA 1/4W	1
R40	401 012 7009	CARBON 10K JA 1/4W	1
R41	401 013 5301	CARBON 1.2K JA 1/4W	1
R42	401 013 5301	CARBON 1.2K JA 1/4W	1
R43	401 022 1905	CARBON 680 JA 1/4W	1
R44	401 013 5301	CARBON 1.2K JA 1/4W	1
R45	401 013 5301	CARBON 1.2K JA 1/4W	1
R46	401 012 5708	CARBON 1K JA 1/4W	1
R47	401 012 5708	CARBON 1K JA 1/4W	1
R48	401 023 1706	CARBON 820 JA 1/4W	1
R49	401 016 4806	CARBON 22K JA 1/4W	1
R50	401 023 1706	CARBON 820 JA 1/4W	1
R51	401 022 3107	CARBON 6.8K JA 1/4W	1
R52	401 012 5708	CARBON 1K JA 1/4W	1
R53	401 012 7009	CARBON 10K JA 1/4W	1
R54	401 068 3901	OXIDE-MT 470 JA 2W	1
R55	401 012 7009	CARBON 10K JA 1/4W	1
R56	401 016 2604	CARBON 220 JA 1/4W	1
R57	401 022 1905	CARBON 680 JA 1/4W	1
R58	401 062 1408	OXIDE-MT 470 JA 1W	1
R59	401 061 5506	OXIDE-MT 39 JA 1W	1
R60	401 020 2904	CARBON 47K JA 1/4W	1
R61	401 020 2003	CARBON 4.7K JA 1/4W	1
R62	401 012 7009	CARBON 10K JA 1/4W	1
R63	401 023 0709	CARBON 82 JA 1/4W	1
	POWER SWITCH P.C.B. ASSY		
75	141-0-1939-17440	Power Switch P.C.B. Assy	1
S9	⚠ 4-2319-75900	Push Switch (Power)	1

PRODUCT SAFETY NOTICE

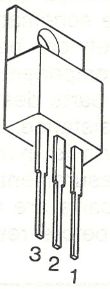
Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

NOTES:

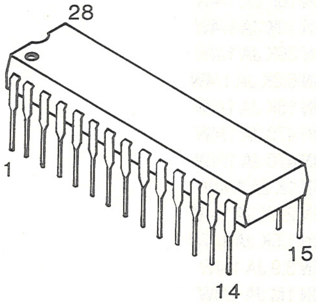
1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

SEMICONDUCTOR LEAD IDENTIFICATION

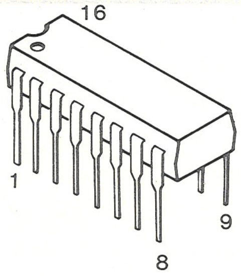
INTEGRATED CIRCUITS



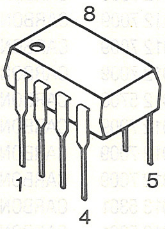
- NJM 7812
- NJM 7912



- LM 6416 E - 1971

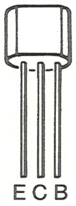


- MN 4049 B

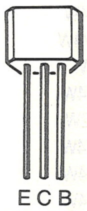


- LA 6458 DS

BI-POLAR TRANSISTORS

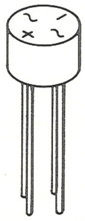


- 2SA 608
- 2SA 984
- 2SC 536
- 2SC 2274

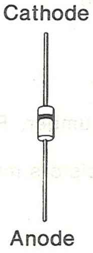


- 2SD 1012

DIODES

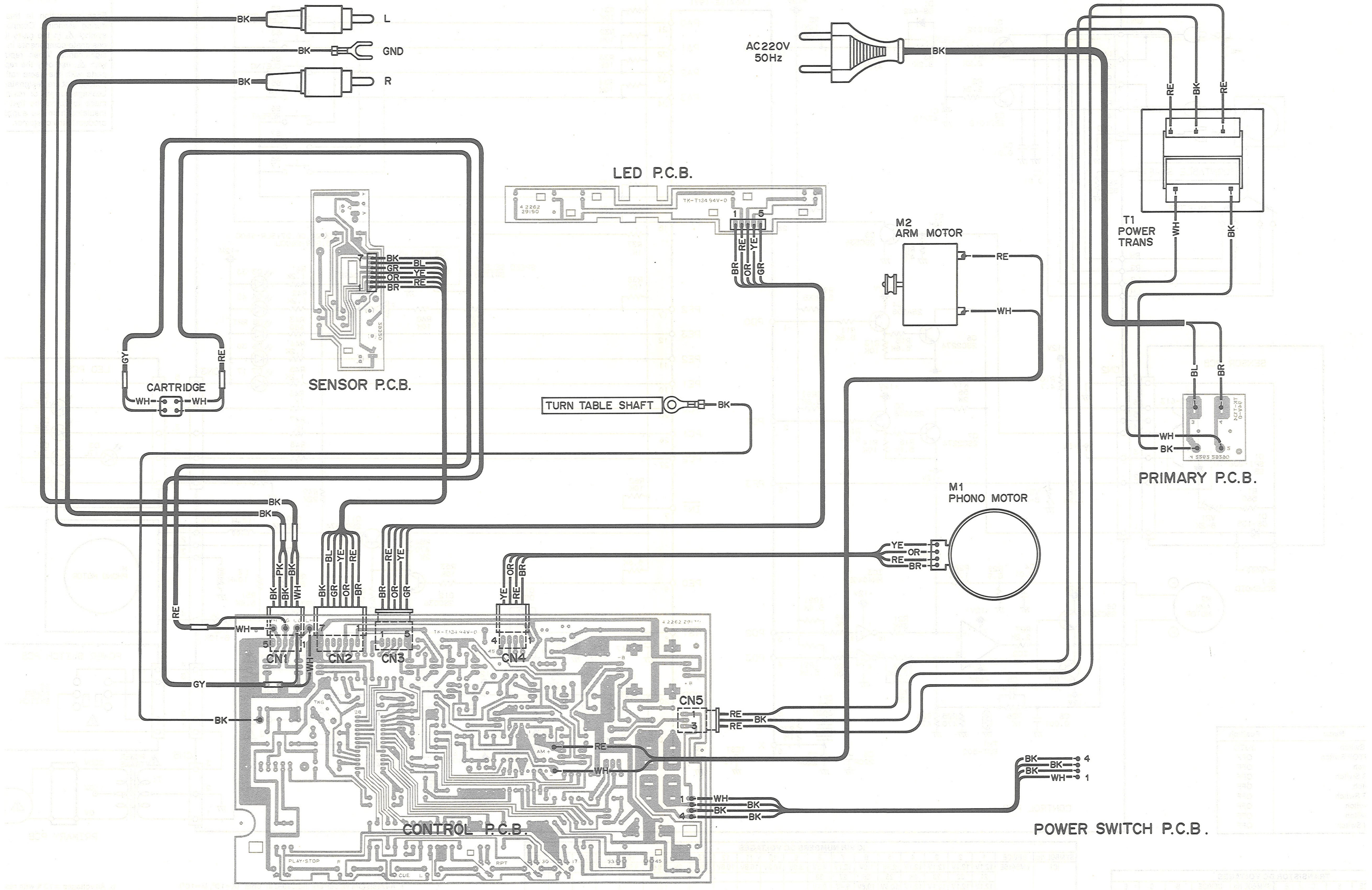


- W 02

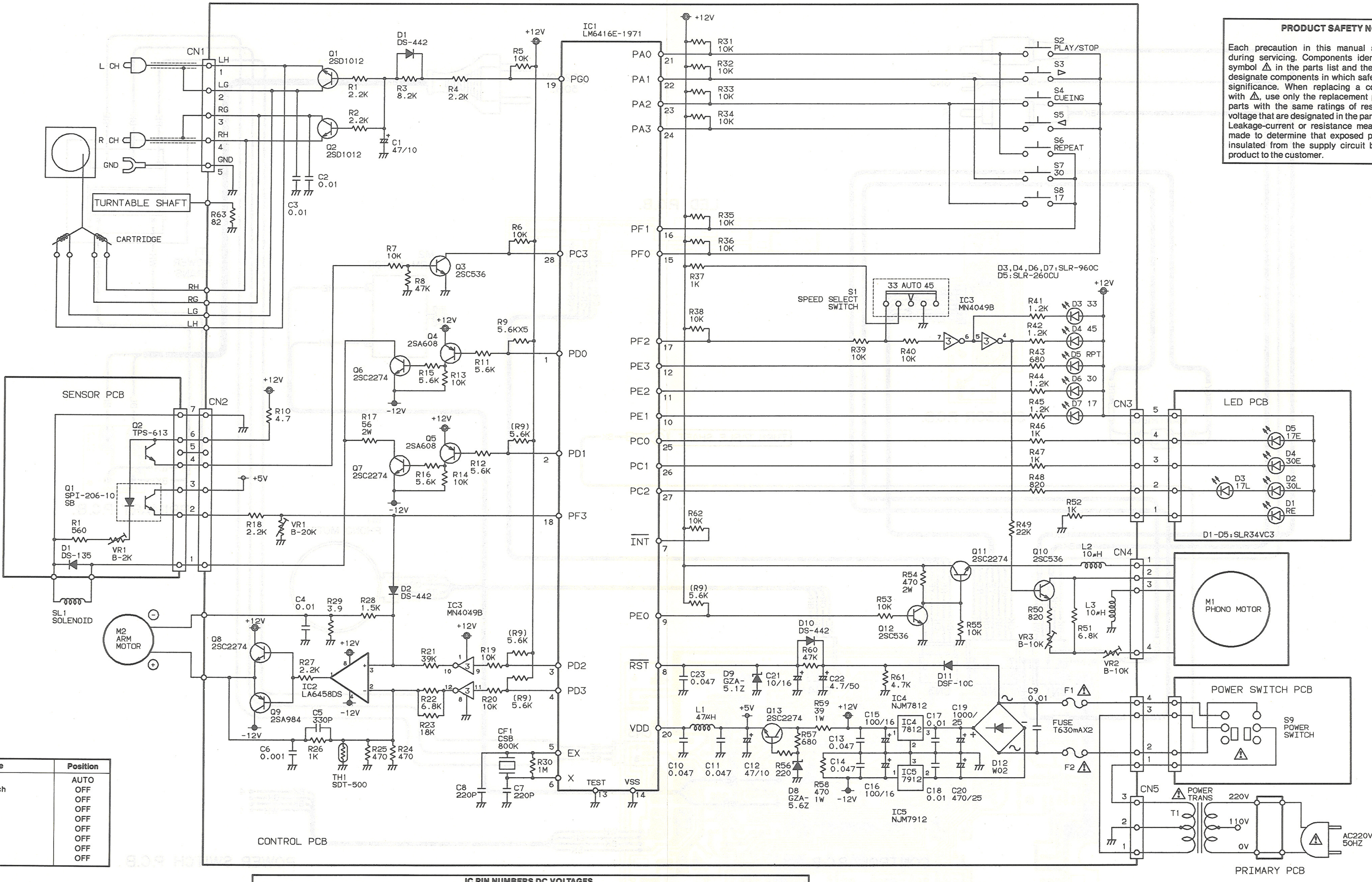

Cathode
Anode

- DS 442
- DSF 10 C
- GZA 5.1 Z
- GZA 5.6 Z

POINT TO POINT WIRING DIAGRAM


BK
L
GND
R
AC220V
50Hz
BK
RE
BK
RE
LED P.C.B.
1
5
BR
RE
OR
YE
GR
M2
ARM MOTOR
RE
WH
T1
POWER
TRANS
WH
BK
SENSOR P.C.B.
7
BK
GR
OR
BR
BL
YE
RE
GY
RE
CARTRIDGE
WH
WH
TURN TABLE SHAFT
BK
BL
BR
WH
BK
PRIMARY P.C.B.
M1
PHONO MOTOR
YE
OR
RE
BR
BK
BK
PK
WH
BL
YE
RE
GR
CN1
CN2
CN3
CN4
CN5
5
1
7
1
5
4
1
3
GY
RE
CONTROL P.C.B.
PLAY/STOP
CUE
RPT
WH
BK
BK
4
1
POWER SWITCH P.C.B.

SCHEMATIC DIAGRAM


CN1
L CH
R CH
GND
LH
1
LG
2
RG
3
RH
4
GND
5
TURNTABLE SHAFT
R63 82
CARTRIDGE
Q1 2SD1012
Q2 2SD1012
R1 2.2K
R2 2.2K
D1 DS-442
R3 8.2K
R4 2.2K
C1 47/10
C2 0.01
C3 0.01
+12V
R5 10K
IC1 LM6416E-1971
PG0
PA0
PA1
PA2
PA3
PF1
PF0
PF2
PE3
PE2
PE1
PC0
PC1
PC2
INT
PE0
RST
VDD
EX
X
TEST
VSS
PC3
PD0
PD1
PF3
PD2
PD3
R6 10K
R7 10K
R8 47K
Q3 2SC536
R9 5.6KX5
Q4 2SA608
Q6 2SC2274
R11 5.6K
R13 10K
R15 5.6K
R17 56 2W
Q5 2SA608
Q7 2SC2274
R12 5.6K
R14 10K
R16 5.6K
(R9) 5.6K
-12V
SENSOR PCB
CN2
Q2 TPS-613
Q1 SPI-206-10 SB
R1 560
VR1 B-2K
D1 DS-135
SL1 SOLENOID
+5V
R10 4.7
R18 2.2K
VR1 B-20K
D2 DS-442
M2 ARM MOTOR
Q8 2SC2274
Q9 2SA984
C4 0.01
R29 3.9
R28 1.5K
IC3 MN4049B
IC2 LA6458DS
R27 2.2K
C5 330P
R21 39K
R19 10K
R22 6.8K
R20 10K
R23 18K
C6 0.001
R26 1K
TH1 SDT-500
R25 470
R24 470
CF1 CSB 800K
R30 1M
C8 220P
C7 220P
CONTROL PCB
R31 10K
R32 10K
R33 10K
R34 10K
R35 10K
R36 10K
R37 1K
R38 10K
R39 10K
R40 10K
R62 10K
S2 PLAY/STOP
S3 ▷
S4 CUEING
S5 ◁
S6 REPEAT
S7 30
S8 17
S1 SPEED SELECT SWITCH
33 AUTO 45
IC3 MN4049B
D3,D4,D6,D7:SLR-960C
D5:SLR-260CU
R41 1.2K
R42 1.2K
R43 680
R44 1.2K
R45 1.2K
D3 33
D4 45
D5 RPT
D6 30
D7 17
R46 1K
R47 1K
R48 820
R52 1K
R49 22K
CN3
LED PCB
D5 17E
D4 30E
D3 17L
D2 30L
D1 RE
D1-D5:SLR34VC3
Q11 2SC2274
Q10 2SC536
L2 10μH
CN4
R54 470 2W
R53 10K
Q12 2SC536
R55 10K
R50 820
L3 10μH
R51 6.8K
VR3 B-10K
VR2 B-10K
M1 PHONO MOTOR
D10 DS-442
R60 47K
C23 0.047
D9 GZA-5.1Z
C21 10/16
C22 4.7/50
R61 4.7K
D11 DSF-10C
L1 47μH
+5V
Q13 2SC2274
R59 39 1W
R57 680
R56 220
D8 GZA-5.6Z
R58 470 1W
C10 0.047
C11 0.047
C12 47/10
C13 0.047
C14 0.047
C15 100/16
C16 100/16
IC4 NJM7812
IC5 NJM7912
C17 0.01
C18 0.01
C19 1000/25
C20 470/25
D12 W02
C9 0.01
F1
F2
FUSE T630mAX2
POWER SWITCH PCB
S9 POWER SWITCH
CN5
POWER TRANS
T1
220V
110V
0V
AC220V 50HZ
PRIMARY PCB

PRODUCT SAFETY NOTICE

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No.	Name	Position
S1	SPEED Switch	AUTO
S2	PLAY/STOP Switch	OFF
S3	(▷) Switch	OFF
S4	CUEING Switch	OFF
S5	(◁) Switch	OFF
S6	REPEAT Switch	OFF
S7	30cm Switch	OFF
S8	17cm Switch	OFF
S9	POWER Switch	OFF

TRANSISTOR DC VOLTAGES

SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E
Q4	2SA608	12.1V	−12.0V	12.1V	Q9	2SA984	0.6V	−12.0V	0V
Q5	2SA608	12.1V	−12.0V	12.1V	Q10	2SC536	1.6V	0.9V	0.9V
Q6	2SC2274	−12.0V	0V	−12.0V	Q11	2SC2274	0.1V	12.1V	0.9V
Q7	2SC2274	−12.0V	0V	−12.0V	Q12	2SC536	0.7V	0.1V	0V
Q8	2SA608	0.6V	12.1V	0V	Q13	2SC2274	5.9V	11.2V	5.2V

IC PIN NUMBERS DC VOLTAGES

SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC1	LM6416E	12.1V	12.1V	12.1V	12.1V	2.5V	1.9V	12.1V	4.5V	8.0V	10.8V	10.8V	10.6V	0V	0V	9.9V	9.9V	12.1V	0V	12.1V	5.2V
		21	22	23	24	25	26	27	28												
		12.1V	12.1V	12.1V	12.1V	10.8V	10.8V	9.4V	0.1V												
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC2	LA6458DS	0.6V	0V	0V	−12.0V	–	–	–	12.1V												
IC3	MN4049B	12.1V	–	–	12.1V	0.2V	0.2V	12.1	0V	12.1V	0V	12.1V	0V	–	–	–	–				
IC4	NJM7812	12.2V	0V	20.6V																	
IC5	NJM7912	−12.0V	−21.0V	0V																	

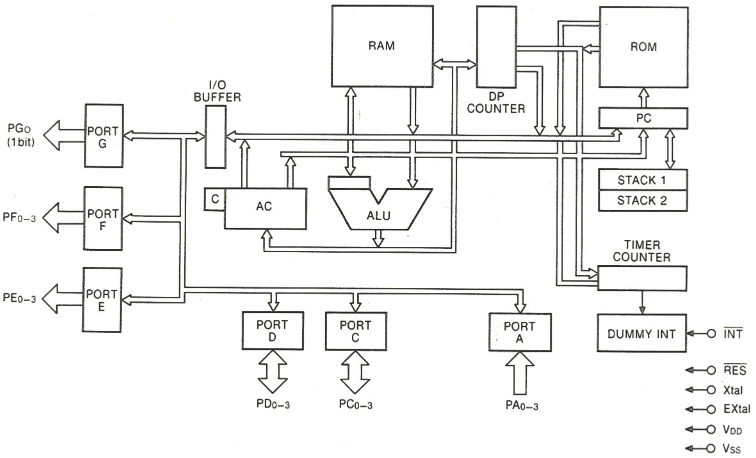
NOTES:

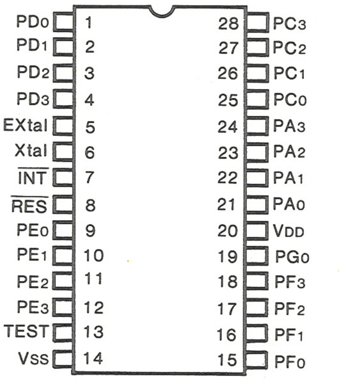
1. All resistors values are indicated in "ohm" (K=10^3, M=10^6).
2. All capacitors values are indicated in "μF" (P=10^{-12}).
3. All voltages indicated on the schematics are measured under the following conditions.
   a. Use a V.T.V.M.
   b. All voltages ±10 % with respect to chassis ground
   c. No signals at input terminals
   d. AC input at 220 volts 50 Hz
4. This is a basic schematic diagram.

Because Fisher products are subject to continuous improvement, Fisher Corporation reserves the right to make any changes or modifications without notice.

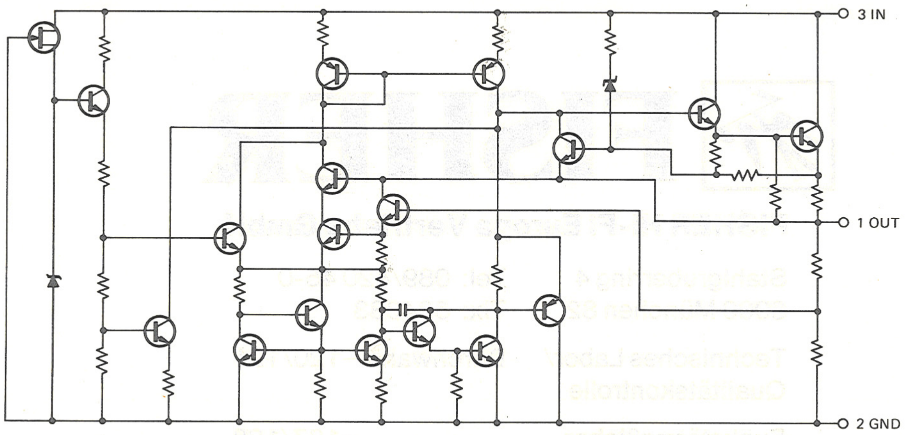
IC SIGNAL FLOW & EQUIVALENT CIRCUIT

CONTROL IC LM 6416 E

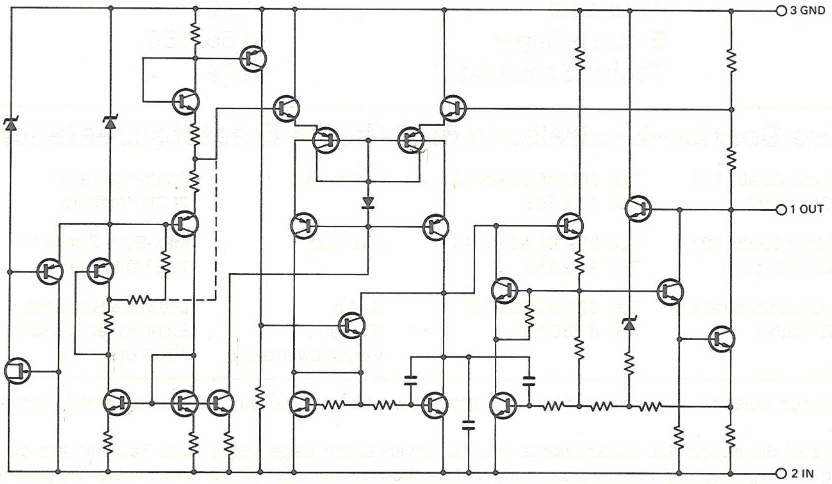

RAM
DP COUNTER
ROM
I/O BUFFER
PC
PG0 (1bit)
PORT G
C
AC
ALU
STACK 1
STACK 2
PF0–3
PORT F
TIMER COUNTER
PE0–3
PORT E
PORT D
PORT C
PORT A
DUMMY INT
INT
PD0–3
PC0–3
PA0–3
RES
Xtal
EXtal
VDD
VSS


PD0 1
PD1 2
PD2 3
PD3 4
EXtal 5
Xtal 6
INT 7
RES 8
PE0 9
PE1 10
PE2 11
PE3 12
TEST 13
VSS 14
28 PC3
27 PC2
26 PC1
25 PC0
24 PA3
23 PA2
22 PA1
21 PA0
20 VDD
19 PG0
18 PF3
17 PF2
16 PF1
15 PF0

VOLTAGE REGULATOR IC NJM 7812


3 IN
1 OUT
2 GND

VOLTAGE REGULATOR IC NJM 7912


3 GND
1 OUT
2 IN

FISHER

FISHER Hi-Fi Europa Vertriebs GmbH

Stahlgruberring 4
8000 München 82

Tel: 089/420 45-0
Tlx: 524033

Technisches Labor/ Qualitätskontrolle	Durchwahl	–120/121
Funkstörmeßlabor		–127/128
Service-Zentrale		
Color TV		–166
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Weitere Service-Zentralen in BRD (keine Ersatzteilbestellungen)

Offenbach/ Frankfurt	Frankfurter Straße 121 6050 Offenbach	Tel: 069/88 80 45/48 Tlx: 4 12 558	Hamburg	Spaldingstraße 1 2000 Hamburg	Tel: 040/23 12 23/24 Tlx: 2 173 839
Military	Frankfurter Straße 121 6050 Offenbach	Tel: 069/88 80 45/48 Tlx: 4 12 558	Ditzingen	Max-Eyth-Straße 11 7257 Ditzingen	Tel: 07156/50 88 Tlx: 7 245 278
Düsseldorf-Erkrath	Albert-Einstein-Straße 8 4006 Erkrath 1	Tel: 0211/200 05-0 Tlx: 8 588 563	Berlin (Fisher Vertragswerkstatt)	Drewitz & Kaulbach Eisenacher Straße 53 1000 Berlin 62	Tel: 030/781 20 01 Tlx: 186 460

Unser FISHER-Team steht Ihnen jederzeit gerne zur Verfügung. Ersatzteilbestellungen wickeln Sie bitte ausschließlich mit unserer Service-Zentrale München ab.
Senden Sie uns im Garantiefall die ausgefüllte Garantiekarte ein. Bei unverkauften Lagergeräten des Fachhandels gilt als Garantienachweis eine eidesstattliche Versicherung mit eingetragener Modellbezeichnung und Geräte-Nummer oder ein Liefernachweis. Die gleiche Regelung besteht auch für Reparaturaufträge.
Bitte geben Sie unbedingt die Ersatzteil-Nummer und die Modellbezeichnung an.
Sie sparen so wertvolle Zeit. Vielen Dank.

May/'86/2,000 **Printed in Japan**